Inspection Report For Well: UT20736 - 06480

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/10/2013
Others: Ajayi, Christopher — Time: 1:45 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 21-13		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 9/9/2005		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESW S21 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1870 /
Last MIT:	Pass 9/29/2010	***Annulus Pressure From Last MIT:***	1045

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
☐ Construction / Workover ☐ Response to Complaint ☐ Other
☐ Plugging ☒ Routine
☐ Post-Closure ☐ Witness MIT

ICIS Entered
Date 12/30/13
Initials JB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 1835 / L: ____ psig	Gauge Range: Scada psig	Gauge Owner:	☐ EPA ☒ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: opened psig	Gauge Range: opened psig	Gauge Owner:	☒ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator

Operating Status: (Select One)
☒ Active ☐ Not Injecting ☐ Plugged and Abandoned
☐ Being Reworked ☐ Production ☐ Under Construction

U2 Entered
Date 12/17/13
Initial JR

See page 2 for photos, comments, and site conditions.

TAB	GREEN	BLUE	CBI
		1	

Inspection Report For Well: UT20736 - 06480 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____ _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

JAN 0 8 2013

Ref: 8ENF-UFO

CERTIFIED MAIL 7009-3410-0000-2599-7631
RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

Re: Underground Injection Control (UIC)
Permission to Resume Injection
Tribal 21-14, 16-11, 21-03 and 07-09 Wells
EPA ID# UT20736-06481, 04393, 04363 and 04415
API # 43-013-31742, 43-013-31799, 43-013-31752 and 43-013-31900
Antelope Creek Oil Field
Duchesne County, UT

	GREEN	BLUE	CBI
TAB		1	

Dear Mr. Farnsworth:

On January 2, 2013, the Environmental Protection Agency (EPA) received information from Petroglyph Operating Company, Inc. on the above referenced wells concerning the workovers and the followup mechanical integrity tests (MIT) conducted between November 8, 2012 and November 11, 2012. The data submitted shows that the wells passed the required MITs. Therefore, pursuant to Title 40 of the Code of Federal Regulations Section 144.51(q)(2) (40 C.F.R. §144.51(q)(2)), permission to resume injection is granted. Under continuous service, the next MITs will be due on or before November 8, 2017 for the 07-09 well, November 9, 2017 for the 21-03 well, November 10, 2017 for the 21-14 well and November 11, 2017 for the 16-11 well.

Pursuant to 40 C.F.R. §144.52(a)(6), if the well is not used for a period of at least two (2) years ("temporary abandonment"), it shall be plugged and abandoned unless EPA is notified and procedures are described to EPA ensuring the well will not endanger underground sources of drinking water ("non-endangerment demonstration") during its continued temporary abandonment. A successful MIT is an acceptable non-endangerment demonstration and would be necessary every two (2) years the well continues in temporary abandonment.

Failure to comply with a UIC Permit, or the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitute one or more violations of the Safe Drinking Water Act, 42 U.S.C. §300h. Such non-compliance may subject you to formal enforcement by EPA, as codified at 40 C.F.R. Part 22.

If you have any questions concerning this letter, you may contact Sarah Roberts at (303) 312-7056. Please direct all correspondence to the attention of Sarah Roberts at Mail Code 8ENF-UFO.

Sincerely,

Darcy O'Connor, Acting Director
UIC/FIFRA/OPA Technical Enforcement Programs

cc:

Irene Cuch, Jr., Chairwoman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Ronald Wopsock, Vice-Chairman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Reannin Tapoof, Assistant
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Stewart Pike, Councilman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Richard Jenks, Councilman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Frances Poowegup, Councilwoman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

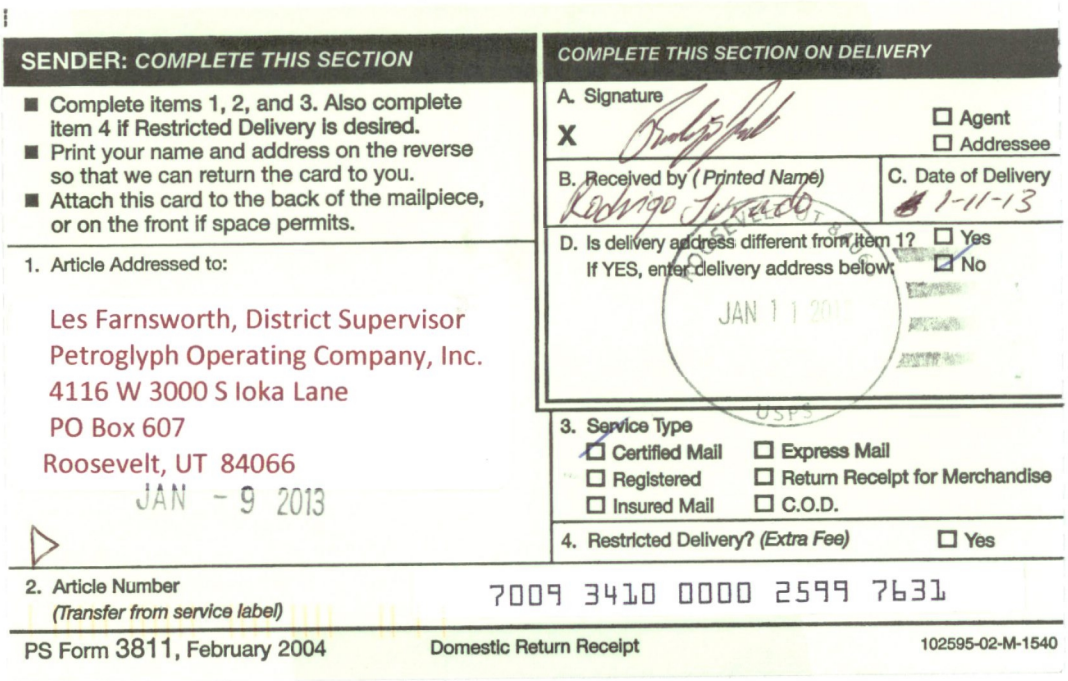
Phillip Chimburas, Councilman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Manuel Myore, Director of Energy,
Minerals and Air Programs
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

Mike Natchees, Environmental
Coordinator
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

John Rogers
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114

bcc: Randy Brown (8P-TA)



SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
PO Box 607
Roosevelt, UT 84066

JAN - 9 2013

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) Rodrigo Toledo C. Date of Delivery 1-11-13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

JAN 11 2013

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number (*Transfer from service label*) 7009 3410 0000 2599 7631

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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Sent To Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
Street, A 4116 W 3000 S Ioka Lane
or PO Bo PO Box 607
City, Stat Roosevelt, UT 84066

PS Form 3800, August 2006 See Reverse for Instructions

7009 3410 0000 2599 7631

hp LaserJet 4345mfp series

Fax Call Report 1

U.S. EPA (6211MR)
303-312-6953
2013-Jan-08 12:53 PM

Job	Date/Time	Type	Identification	Duration	Pages	Result
1570	2013-Jan-08 12:51 PM	Send	9,14357229145	1:03	4	Success

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 WYNKOOP STREET
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Les Farnsworth	Don Breffle
COMPANY:	DATE:
Petroglyph Operating Company	01/08/13
FAX NUMBER:	TOTAL NO. OF PAGES, INCLUDING COVER:
435 722 9145	4
PHONE NUMBER:	SENDER'S PHONE NUMBER:
	303 312 6186
RE:	YOUR REFERENCE NUMBER:
UIC Permission to Resume Injection	

URGENT ☒ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 WYNKOOP STREET
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

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Petroglyph Operating Company	01/08/13
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RE:	YOUR REFERENCE NUMBER:
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URGENT ☒ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8ENF-UFO CONCURRENCE COPY

CERTIFIED MAIL 7009-3410-0000-2599-7631
RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

Re: Underground Injection Control (UIC)
Permission to Resume Injection
Tribal 21-14, 16-11, 21-03 and 07-09 Wells
EPA ID# UT20736-06481, 04393, 04363 and 04415
API # 43-013-31742, 43-013-31799, 43-013-31752 and 43-013-31900
Antelope Creek Oil Field
Duchesne County, UT

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8ENF-UFO
1/2/13

8ENF-UFO
1/2/13

If you have any questions concerning this letter, you may contact Sarah Roberts at (303) 312-7056. Please direct all correspondence to the attention of Sarah Roberts at Mail Code 8ENF-UFO.

Sincerely,

Darcy O'Connor, Acting Director
UIC/FIFRA/OPA Technical Enforcement Programs

cc: Irene Cuch, Jr., Chairwoman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Ronald Wopsock, Vice-Chairman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Reannin Tapoof, Assistant
Uintah & Ouray Business Committee
P.O. Box 190
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Stewart Pike, Councilman
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Richard Jenks, Councilman
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P.O. Box 190
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Frances Poowegup, Councilwoman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Phillip Chimburas, Councilman
Uintah & Ouray Business Committee
P.O. Box 190
Fort Duchesne, Utah 84026

Manuel Myore, Director of Energy,
Minerals and Air Programs
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

Mike Natchees, Environmental
Coordinator
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, Utah 84026

John Rogers
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114

bcc: Randy Brown (8P-TA)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

JUN 17 2005

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer
Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

RE: Additional Well to Antelope Creek Area Permit
UIC Permit No. UT20736-00000
Well ID: UT20736-06480
Ute Tribal No. 21-13, Duchesne County, Utah

Dear Mr. Smith:

The Petroglyph Operating Company, Inc. (Petroglyph) request to convert the former Green River Formation oil well Ute Tribal No. 21-13 to an enhanced recovery injection well in the Antelope Creek Waterflood project is hereby authorized by the Environmental Protection Agency (EPA) under the terms and conditions of the Authorization For Additional Well.

The addition of the proposed injection well, within the exterior boundary of the Uintah & Ouray Indian Reservation, is being made under the authority of 40 CFR §144.33 (c) and terms of the Antelope Creek Waterflood UIC Area Permit No. UT20736-00000. Unless specifically mentioned in the enclosed Authorization For Additional Well, the Ute Tribal No. 21-13 is subject to all terms and conditions of the UIC Area Permit UT20736-00000 as modified.

Please be aware that Petroglyph does not have authorization to begin injection operations into the well until all Prior to Commencing Injection requirements have been submitted and evaluated by the EPA, and Petroglyph has received written authorization from the Director to begin injection.

Prior to receiving authorization to inject, the EPA requires that Petroglyph submit for review and approval the following: (1) the results of a **Part I (Internal) mechanical integrity test** (MIT), (2) a **pore pressure** calculation of the injection interval, and (3) a completed **EPA Form No. 7520-12** Well Rework Record.

The initial Maximum Allowable Injection Pressure (MAIP) for the Ute Tribal No. 21-13 was determined to be **1870 psig.** UIC Area Permit UT20736-00000 also provides the opportunity for the permittee to request a change in the MAIP based upon results of a step rate test that demonstrates that the formation breakdown pressure will not be exceeded.

If you have any questions, please call Mr. Dan Jackson at (303) 312-6155 or 1.800.227.8917 (Ext. 6155). Please submit the required data to **ATTENTION: DAN JACKSON**, at the letterhead address, citing **MAIL CODE: 8P-W-GW** very prominently.

Sincerely,

Stephen S. Tuber
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

encl: Authorization For Conversion of An Additional Well
EPA Form No. 7520-12 (Well Rework Record)

cc: without enclosures
Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

cc: with enclosures;
Elaine Willie
Environmental Coordinator
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

Kirk Fleetwood, PE
BLM - Vernal District
170 South 500 East
Vernal, UT 84078

bcc w/o enclosures:

Barbara Conklin, 8TAP
Nathan Wiser, 8 ENF-UFO

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr Kenneth Smith, Executive VP and COO
Petroglyph Energy
555 S. Cole Blvd
Boise, ID 83709

JUN 17 2005

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] JUN 22 2005 ☐ Agent ☒ Addressee

B. Received by (*Printed Name*) [signature] C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
if YES, enter delivery address below: ☐ No

RECEIVED
JUN 24 2005
EPA Region 8
Ground Water Program

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number
(*Transfer from service label*) 7001 0320 0005 9389 4146

PS Form 3811, August 2001 Domestic Return Receipt 2ACPRI-03-Z-0985

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	JUN 17 2005
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To Mr Kenneth Smith, Executive VP and COO
Street, Apt. No.; or PO Box No. Petroglyph Energy
City, State, ZIP+4 555 S. Cole Blvd
Boise, ID 83709

PS Form 3800, January 2001 See Reverse for Instructions

7001 0320 0005 9389 4146

UIC Program Action : Add - Well - Antelope Creek Waterflood

UIC Number: UT20736-06480 **Well Name:** Ute Tribal 21-13

Operator: Petroglyph

To:	Requested Action:	Mailcode	Initials	Date
Originator: Trish P.	phone: 6271	8P-W-GW	TP	6/3/05
UIC Review	☒ DWJ ☐ CT	8P-W-GW	DWJ	6/6/05
K Bartholow, Admin	*proof*	8P-W-GW	KB	6/10
S Stavnes, Dir, GWP	☐ concur ☐ signature	8P-W-GW		6/14
L Johnson, Admin	*proof*	8P-W		
D Thomas, Dir, WP	☐ concur ☐ signature	8P-W		6/14
M Brennan, Admin	*proof*	8-P		
S Tuber, ARA, OPRA	☐ signature	8-P		
K Bartholow, Admin	*date stamp & mail original letter & copy of docs to Addressee*	8P-W-GW		
Originator	*make CC: copies*	8P-W-GW		
J Taylor	*send Public Notice*	8P-W-GW		
K Bartholow, Admin	*mail copies to CC's*	8P-W-GW	KB	6/17
Originator	*File documents*	8P-W-GW		

LEFT SIDE

- Concurrence Copy
- Request Letter & relevant information
- _____
- _____

RIGHT SIDE

- Response Letter
- _____
- _____

COMMENTS: _____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

JUN 17 2005

Ref: 8P-W-GW

CONCURRENCE COPY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer
Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

RE: Additional Well to Antelope Creek Area Permit
UIC Permit No. UT20736-00000
Well ID: UT20736-06480
Ute Tribal No. 21-13, Duchesne County, Utah

Dear Mr. Smith:

The Petroglyph Operating Company, Inc. (Petroglyph) request to convert the former Green River Formation oil well Ute Tribal No. 21-13 to an enhanced recovery injection well in the Antelope Creek Waterflood project is hereby authorized by the Environmental Protection Agency (EPA) under the terms and conditions of the Authorization For Additional Well.

The addition of the proposed injection well, within the exterior boundary of the Uintah & Ouray Indian Reservation, is being made under the authority of 40 CFR §144.33 (c) and terms of the Antelope Creek Waterflood UIC Area Permit No. UT20736-00000. Unless specifically mentioned in the enclosed Authorization For Additional Well, the Ute Tribal No. 21-13 is subject to all terms and conditions of the UIC Area Permit UT20736-00000 as modified.

Please be aware that Petroglyph does not have authorization to begin injection operations into the well until all Prior to Commencing Injection requirements have been submitted and evaluated by the EPA, and Petroglyph has received written authorization from the Director to begin injection.

Prior to receiving authorization to inject, the EPA requires that Petroglyph submit for review and approval the following: (1) the results of a **Part I (Internal) mechanical integrity test** (MIT), (2) a **pore pressure** calculation of the injection interval, and (3) a completed **EPA Form No. 7520-12** Well Rework Record.

Printed on Recycled Paper

The initial Maximum Allowable Injection Pressure (MAIP) for the Ute Tribal No. 21-13 was determined to be **1870 psig.** UIC Area Permit UT20736-00000 also provides the opportunity for the permittee to request a change in the MAIP based upon results of a step rate test that demonstrates that the formation breakdown pressure will not be exceeded.

If you have any questions, please call Mr. Dan Jackson at (303) 312-6155 or 1.800.227.8917 (Ext. 6155). Please submit the required data to **ATTENTION: DAN JACKSON**, at the letterhead address, citing **MAIL CODE: 8P-W-GW** very prominently.

Sincerely,

Stephen S. Tuber
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

encl: Authorization For Conversion of An Additional Well
EPA Form No. 7520-12 (Well Rework Record)

cc: without enclosures
Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

cc: with enclosures;
Elaine Willie
Environmental Coordinator
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

Kirk Fleetwood, PE
BLM - Vernal District
170 South 500 East
Vernal, UT 84078

bcc w/o enclosures:

Barbara Conklin, 8TAP
Nathan Wiser, 8 ENF-UFO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On October 25, 2004, the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 21-13**
EPA Well ID Number:	**UT20736-06480**
Location:	611 ft FSL & 786 ft FWL SWSW Sec. 21 - T5S - RW Duchesne County, Utah.

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: 6/14/05

Tracy M. Eagle for

Stephen S. Tuber
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the Permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 21-13**
EPA Well ID Number: **UT20736-06480**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity test (MIT);
2. pore pressure calculation of the proposed injection zone; and
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker at 4004 ft to the top of the Basal Carbonate at 6009 ft.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1870 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.002 D = **5107 ft** (top perforation depth KB)
MAIP = 1870 psi

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.*** Based on review of well construction and cementing Records, including a CBL, well construction is considered adequate to prevent fluid movement out of the injection zone and into USDWs.

Tubing and Packer: 2-3/8" or similar size injection tubing is approved; the packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.*** The following wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal No. 21-13 were evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well:	Ute Tribal No. 21-14	Location:	SE SW Sec. 21-T5S-R3W
Well:	Ute Tribal No. 28-04	Location:	SW SE Sec. 20-T5S-R3W

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cementing records and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum the following plugs shall be emplaced:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation at 5107 ft with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 210 ft cement plug inside of the 5-1/2" casing in the interval between approximately 2775 ft to at least 2985 ft that will span across the Mahogany Shale and above the Trona Zone.

PLUG NO. 3: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 343 ft.

PLUG NO. 4: Set a cement plug inside of the 5-1/2" casing, from at least 300 ft to 400 ft.

PLUG NO. 5: Set a cement plug, on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each

schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227-8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Oil Spill and Chemical Release Reporting:

The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:

The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:

Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 21-13**
EPA Well ID Number: **UT20736-00000**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to approximately 1410 ft. According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water is found at approximately 700 ft below ground surface at this well location. The top of casing cement in this well is at 570 ft below ground surface (CBL).

Confining Zone: The Confining Zone at this location is approximately 156 ft of interbedded limestone and shale between the depths (KB) of 3800 to 4004 ft which directly overlies the top of the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log, is an approximately 2005 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone, from the base of the Green River A Lime Marker at 4004 ft (KB) to the top of the Basal Carbonate Formation at 6009 ft (KB).

Well Construction: The CBL shows more than 782 ft of 80% or greater bond across the confining zone, from approximately 3642 ft to 4424 ft.

Surface casing:	8-5/8" casing is set at 393 ft in a 12-1/4" hole, using 250 sacks cement circulated to the surface.
Longstring casing:	5-1/2" casing is set at 6663 ft (KB) in a 7-7/8" hole with a plugged back total depth (PBTD) of 6569 ft, cemented with 1450 sacks cement. Top of Cement (TOC): 570 ft (KB) CBL.
Perforations:	top perforation: **5107 ft** Bottom perforation: **5574 ft**

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for four wells in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well:	Ute Tribal No. 21-14	Top of Cement (TOC):1838 ft (CBL)
Well:	Ute Tribal No. 28-04	TOC: 2610 ft (CBL)

bcc w/o enclosures:

Barbara Conklin, 8TAP
Nathan Wiser, 8 ENF-UFO

OMB No. 2040-0042 Approval Expires 11/30/2014

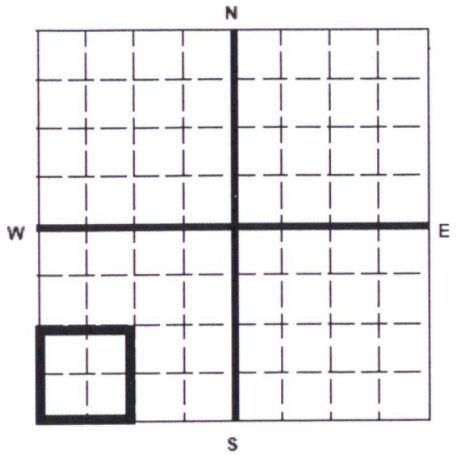
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-06480

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 611 ft. frm (N/S) S Line of quarter section
and 786 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 21-13

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1747	1829	90		0	0
February	16	1784	1784	100		0	0
March	16	1692	1816	127		0	0
April	16	1731	1777	101		0	0
May	16	1791	1848	154		0	0
June	16	1784	1824	103		0	0
July	16	1776	1829	131		0	0
August	16	1798	1813	136		0	0
September	16	1756	1783	28		0	0
October	16	1670	1823	71		0	0
November	16	1726	1763	122		0	0
December	16	1771	1788	108		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

EPA Form 7520-11 (Rev. 12-11)

GREEN TAB 2

UI2 Entered
Date 4/5/17
Initial DB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 21-13 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345326**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/26/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0039
pH:	9.30
Calculated TDS (mg/L):	9575.63
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LangliерSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3136.00	Chloride (Cl):	4000.00
Potassium (K):	24.54	Sulfate (SO_4):	20.00
Magnesium (Mg):	13.48	Bicarbonate (HCO_3):	2094.00
Calcium (Ca):	38.17	Carbonate (CO_3):	
Strontium (Sr):	5.22	Hydroxide(HO):	
Barium (Ba):	11.28	Acetic Acid (CH_3COO)	
Iron (Fe):	157.88	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	50.98	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.11	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.33	Bromine (Br):	
Aluminum (Al):	0.00	Silica (SiO_2):	23.64
Lithium (Li):	2.91	Calcium Carbonate ($CaCO_3$):	
Boron (B):	4.83	Phosphates (PO_4):	8.03
Silicon (Si):	11.05	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	2.24	33.19	0.65	4.66	0.00	0.00	4.78	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149.00	267.00	2.29	33.21	0.56	4.23	0.00	0.00	4.87	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168.00	483.00	2.35	33.23	0.48	3.85	0.00	0.00	4.95	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	700.00	2.42	33.26	0.42	3.52	0.00	0.00	5.03	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206.00	917.00	2.50	33.29	0.38	3.27	0.00	0.00	5.10	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
224.00	1133.00	2.58	33.31	0.36	3.09	0.00	0.00	5.16	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
243.00	1350.00	2.67	33.33	0.34	3.00	0.00	0.00	5.22	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262.00	1567.00	2.76	33.34	0.34	2.97	0.00	0.00	5.27	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
281.00	1783.00	2.85	33.35	0.34	2.99	0.00	0.00	5.32	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2000.00	2.94	33.36	0.35	3.07	0.00	0.00	5.35	114.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
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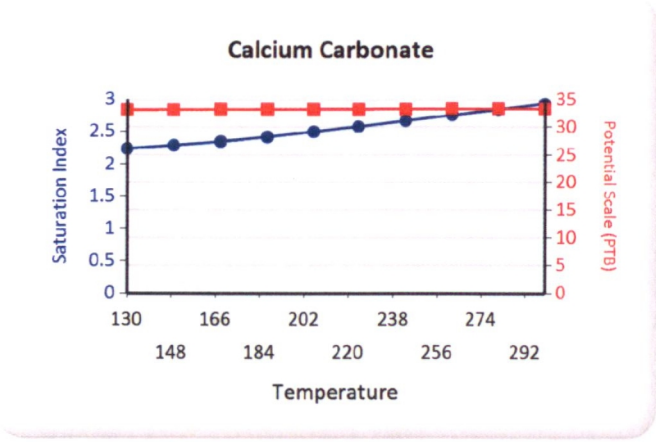
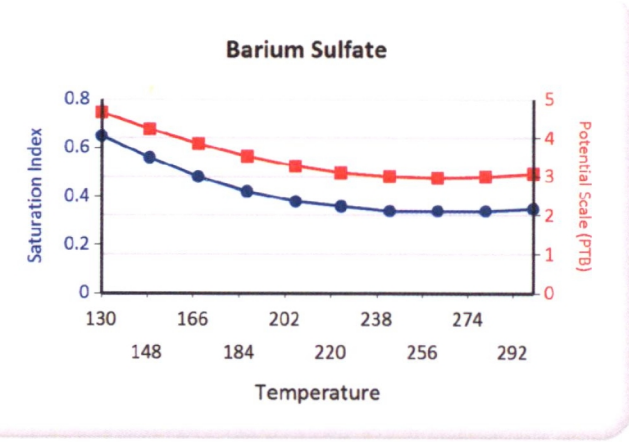
Water Analysis Report

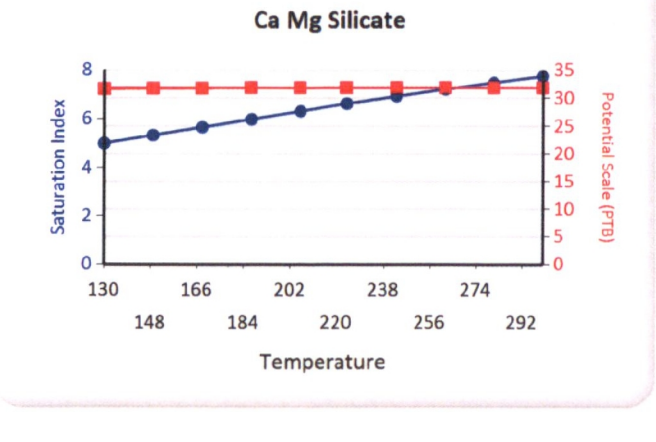
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	4.11	34.27	0.00	0.00	8.31	26.87	5.01	31.71	18.93	54.84
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	4.31	34.28	0.00	0.00	8.96	26.90	5.34	31.80	19.30	54.84
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	4.48	34.28	0.00	0.00	9.60	26.91	5.67	31.85	19.68	54.84
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	4.64	34.28	0.00	0.00	10.23	26.92	6.00	31.89	20.07	54.84
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	4.79	34.28	0.00	0.00	10.84	26.93	6.33	31.91	20.45	54.84
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91	34.28	0.00	0.00	11.42	26.93	6.64	31.92	20.82	54.84
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	5.02	34.28	0.00	0.00	11.97	26.93	6.94	31.93	21.18	54.84
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	5.10	34.28	0.00	0.00	12.49	26.93	7.23	31.93	21.52	54.84
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	34.28	0.00	0.00	12.98	26.93	7.50	31.94	21.84	54.84
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	5.23	34.28	0.00	0.00	13.43	26.93	7.76	31.94	22.13	54.84

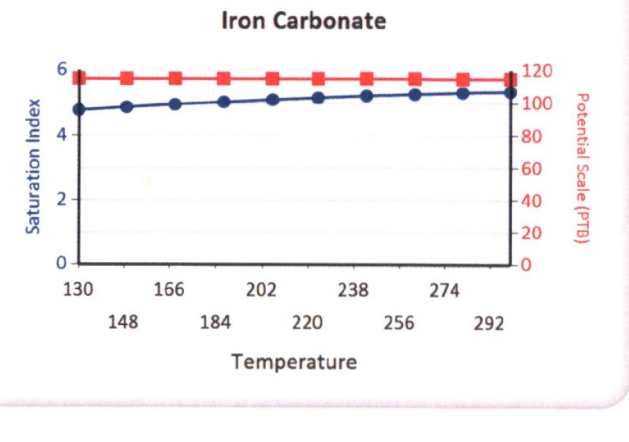
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









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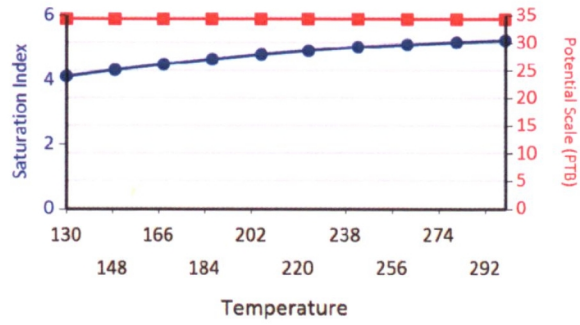
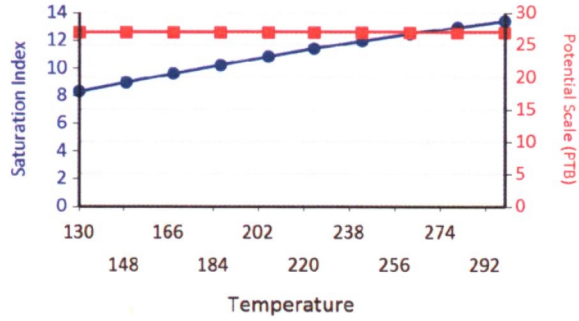
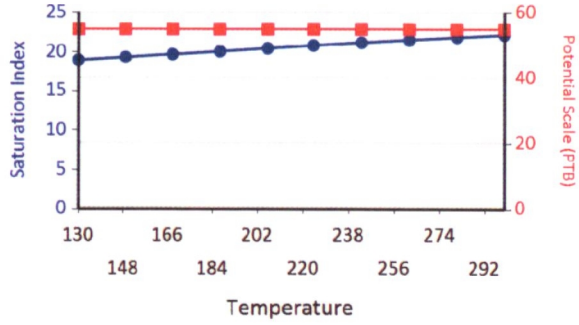
Zinc Carbonate



Mg Silicate



Fe Silicate



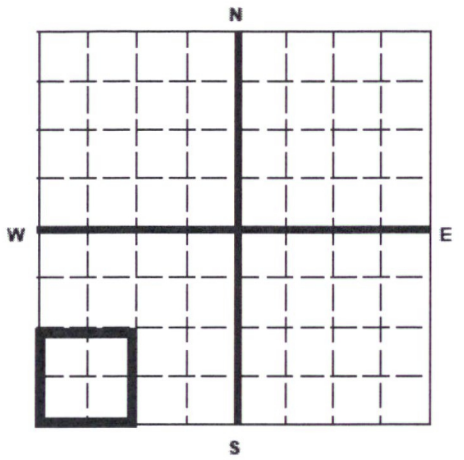
OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State: Utah
County: Duchesne
Permit Number: UT2736-~~04434~~ 06480

Surface Location Description

___ 1/4 of ___ 1/4 of SW 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 611 ft. frm (N/S) S Line of quarter section and 786 ft. from (E/W) W Line of quarter section. U2 Entered

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Date 3/2/16
Initial JB

Lease Name: Ute Indian Tribe
Well Number: UTE TRIBAL 21-13

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1757	1792	268		0	0
February	15	1794	1822	263		0	0
March	15	1798	1842	284		0	0
April	15	1779	1787	266		0	0
May	15	1789	1824	306		0	0
June	15	1799	1824	293		0	0
July	15	1804	1839	250		0	0
August	15	1798	1831	255		0	0
September	15	1800	1834	217		0	0
October	15	1822	1822	226		0	0
November	15	1793	1828	137		0	0
December	15	1818	1825	157		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

GREEN BLUE CBI
TAB 2

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 21-13 INJ, DUCHESNE**	Lab Tech:	**Gary Peterson**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327623**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/7/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0042
pH:	8.70
Calculated TDS (mg/L):	10011.26
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	20.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3450.02	Chloride (Cl):	4500.00
Potassium (K):	22.01	Sulfate (SO_4):	10.00
Magnesium (Mg):	37.26	Bicarbonate (HCO_3):	1830.00
Calcium (Ca):	80.06	Carbonate (CO_3):	
Strontium (Sr):	5.43	Acetic Acid (CH_3COO)	
Barium (Ba):	9.55	Propionic Acid (C_2H_5COO)	
Iron (Fe):	29.84	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	12.92	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.31	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.48	Silica (SiO_2):	23.38
Aluminum (Al):	0.00	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.30	Phosphates (PO_4):	16.20
Boron (B):	2.78	Oxygen (O_2):	
Silicon (Si):	10.93		

Notes:
S=244.43

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	2.25	68.49	0.07	0.56	4.88	16.46	3.94	21.70	0.00	0.00	0.00	0.00	0.00	0.00	11.57	6.75
167.00	267.00	2.18	68.00	0.10	0.75	4.88	16.46	3.85	21.69	0.00	0.00	0.00	0.00	0.00	0.00	11.70	6.75
153.00	483.00	2.11	67.58	0.14	1.00	4.88	16.46	3.76	21.69	0.00	0.00	0.00	0.00	0.00	0.00	11.84	6.75
140.00	700.00	2.04	67.10	0.18	1.29	4.90	16.46	3.67	21.69	0.00	0.00	0.00	0.00	0.00	0.00	12.01	6.75
127.00	917.00	1.99	66.58	0.24	1.64	4.94	16.46	3.58	21.69	0.00	0.00	0.00	0.00	0.00	0.00	12.18	6.75
113.00	1133.00	1.93	66.04	0.31	2.03	4.98	16.46	3.49	21.69	0.00	0.00	0.00	0.00	0.00	0.00	12.38	6.75
100.00	1350.00	1.88	65.48	0.39	2.45	5.05	16.46	3.40	21.69	0.00	0.00	0.00	0.00	0.00	0.00	12.59	6.75
87.00	1567.00	1.84	64.93	0.49	2.89	5.12	16.46	3.31	21.69	0.00	0.00	0.00	0.00	0.00	0.00	12.83	6.75
73.00	1783.00	1.80	64.39	0.60	3.34	5.22	16.46	3.23	21.68	0.00	0.00	0.00	0.00	0.00	0.00	13.08	6.75
60.00	2000.00	1.76	63.88	0.73	3.79	5.33	16.46	3.14	21.67	0.00	0.00	0.00	0.00	0.00	0.00	13.36	6.75

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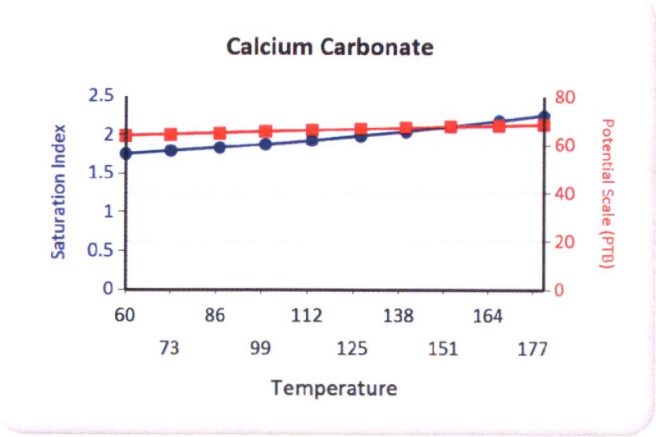
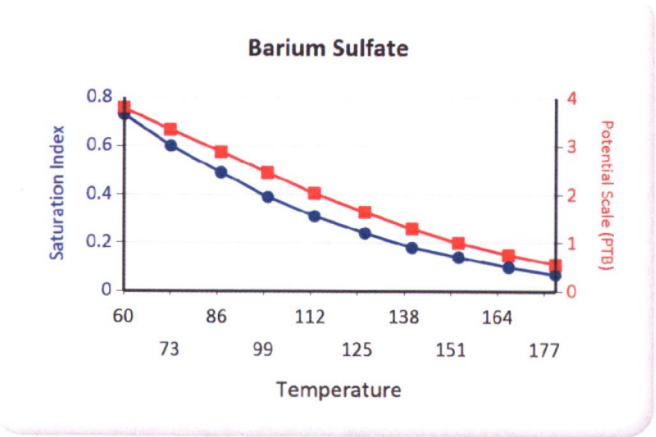
Water Analysis Report

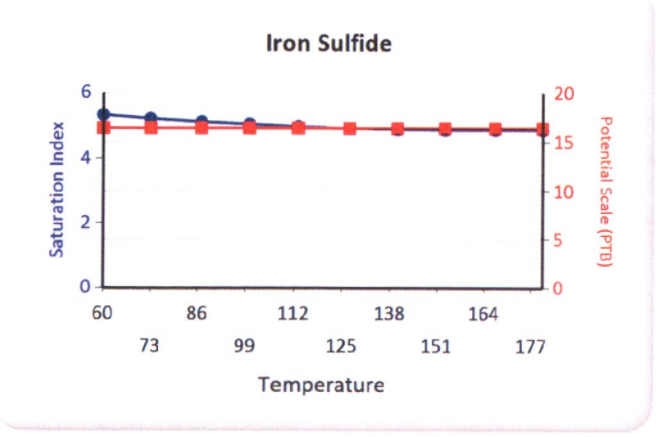
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50	8.69	11.23	0.13	8.37	57.40	4.83	30.76	15.20	23.21
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	3.36	8.68	11.46	0.13	7.79	54.58	4.49	30.19	14.78	23.21
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	3.21	8.68	11.72	0.13	7.22	51.93	4.17	29.52	14.39	23.21
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.06	8.68	12.00	0.13	6.65	48.97	3.84	28.62	14.01	23.21
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	2.89	8.67	12.31	0.13	6.07	45.82	3.52	27.50	13.63	23.20
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	2.71	8.67	12.64	0.13	5.49	42.56	3.20	26.14	13.25	23.20
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53	8.66	13.00	0.13	4.91	39.20	2.88	24.58	12.89	23.20
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33	8.64	13.39	0.13	4.32	35.70	2.56	22.82	12.52	23.20
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	8.61	13.82	0.13	3.72	32.02	2.24	20.86	12.17	23.20
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	8.56	14.28	0.13	3.11	28.05	1.92	18.70	11.82	23.19

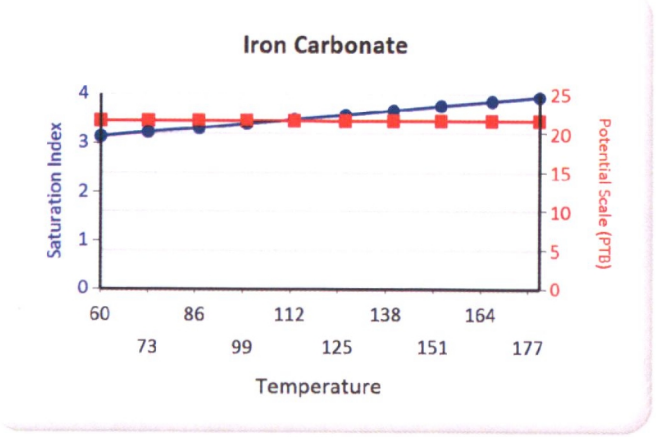
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

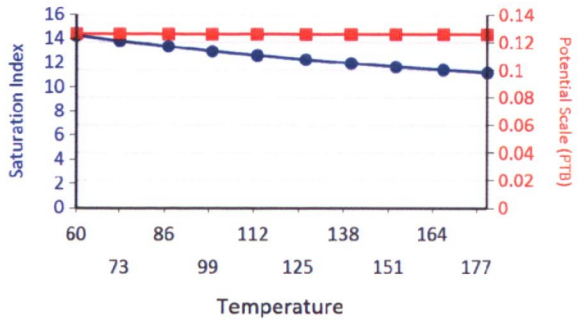




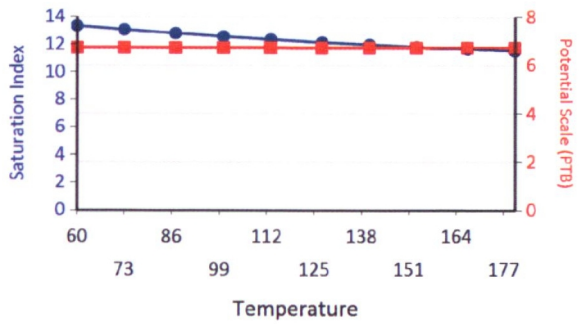




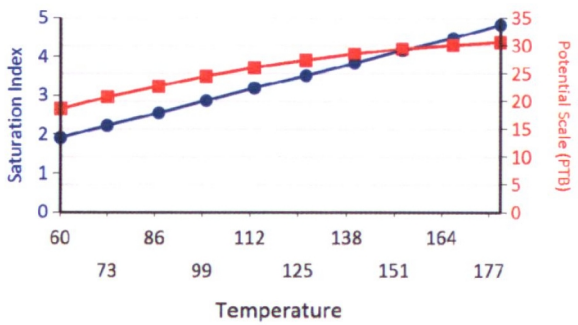
Lead Sulfide



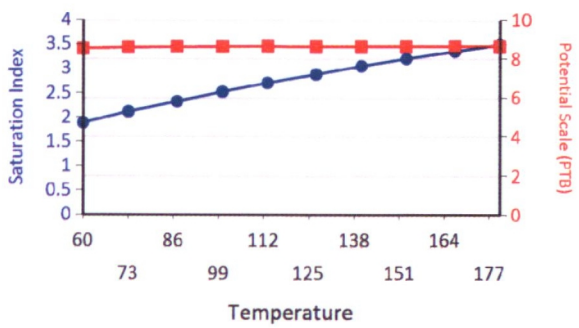
Zinc Sulfide



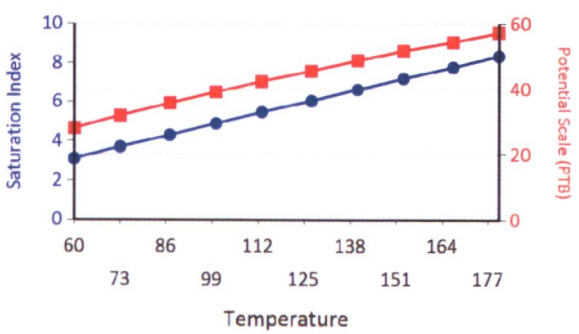
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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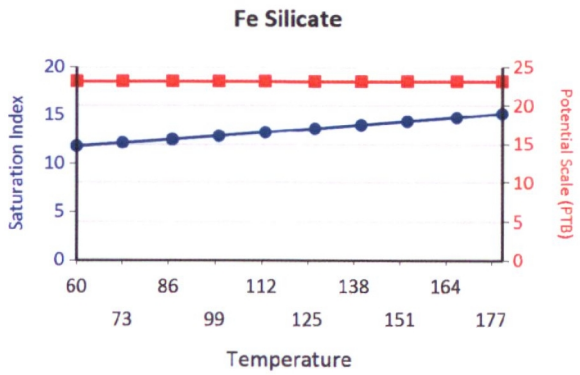


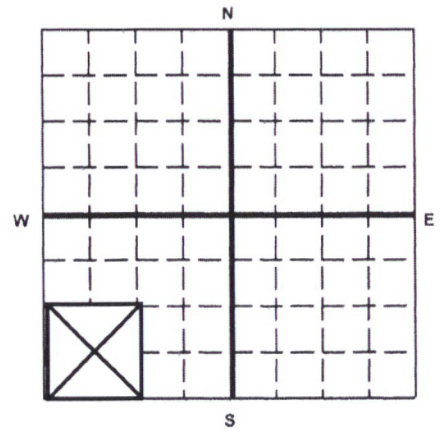
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

EPA ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-06480

Surface Location Description

___ 1/4 of ___ 1/4 of SW 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 611 ft. frm (N/S) S Line of quarter section and 786 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
☐ Brine Disposal	☐ Individual
☒ Enhanced Recovery	☒ Area
☐ Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 21-13

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1804	1835	313		0	0
February	14	1798	1805	243		0	0
March	14	1807	1834	372		0	0
April	14	1801	1841	329		0	0
May	14	1782	1821	376		0	0
June	14	1817	1831	362		0	0
July	14	1679	1817	307		0	0
August	14	1789	1824	~~299~~	266 inj monthly	0	0
September	14	1682	1833	200		0	0
October	14	1821	1828	299		0	0
November	14	1812	1821	308		0	0
December	14	1808	1823	311		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/3/15
Initial bw

TAB	GREEN	BLUE	CBI
		2	

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 21-13 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297485**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0040
pH:	8.70
Calculated TDS (mg/L):	10309.26
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	40.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2585.80	Chloride (Cl):	5000.00
Potassium (K):	39.24	Sulfate (SO_4):	605.00
Magnesium (Mg):	27.85	Bicarbonate (HCO_3):	1830.00
Calcium (Ca):	42.23	Carbonate (CO_3):	
Strontium (Sr):	5.29	Acetic Acid (CH_3COO)	
Barium (Ba):	10.62	Propionic Acid (C_2H_5COO)	
Iron (Fe):	121.31	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	20.74	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.34	Silica (SiO_2):	20.84

Notes:
B=5.65 Al=.14 Li=1.16

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.72	35.73	2.45	6.30	6.16	36.20	4.01	88.17	0.00	0.00	0.00	0.00	0.00	0.00	13.55	10.83
88.00	157.00	1.73	35.73	2.36	6.30	6.09	36.20	4.05	88.17	0.00	0.00	0.00	0.00	0.00	0.00	13.37	10.83
97.00	300.00	1.74	35.77	2.28	6.29	6.02	36.20	4.09	88.18	0.00	0.00	0.00	0.00	0.00	0.00	13.20	10.83
106.00	443.00	1.75	35.81	2.21	6.29	5.96	36.20	4.13	88.18	0.00	0.00	0.00	0.00	0.00	0.00	13.04	10.83
115.00	585.00	1.77	35.85	2.15	6.28	5.92	36.20	4.17	88.19	0.00	0.00	0.00	0.00	0.00	0.00	12.90	10.83
124.00	728.00	1.78	35.89	2.09	6.27	5.88	36.20	4.21	88.19	0.00	0.00	0.00	0.00	0.00	0.00	12.76	10.83
133.00	871.00	1.80	35.94	2.03	6.27	5.84	36.20	4.25	88.19	0.00	0.00	0.00	0.00	0.00	0.00	12.63	10.83
142.00	1014.00	1.82	35.99	1.98	6.26	5.81	36.20	4.29	88.19	0.00	0.00	0.00	0.00	0.00	0.00	12.50	10.83
151.00	1157.00	1.85	36.05	1.94	6.25	5.79	36.20	4.32	88.20	0.00	0.00	0.00	0.00	0.00	0.00	12.39	10.83
160.00	1300.00	1.87	36.10	1.90	6.25	5.78	36.20	4.36	88.20	0.00	0.00	0.00	0.00	0.00	0.00	12.28	10.83

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55	13.90	0.00	0.00	3.41	21.67	1.64	9.92	13.89	22.60
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67	13.91	0.00	0.00	3.73	22.47	1.80	10.38	14.04	22.60
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.79	13.92	0.00	0.00	4.07	23.26	1.98	10.86	14.22	22.60
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	2.90	13.93	0.00	0.00	4.43	23.86	2.16	11.27	14.41	22.60
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	3.01	13.93	0.00	0.00	4.78	24.31	2.35	11.63	14.61	22.60
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	3.11	13.93	0.00	0.00	5.14	24.63	2.54	11.93	14.82	22.60
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	3.21	13.94	0.00	0.00	5.50	24.85	2.73	12.18	15.04	22.60
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	13.94	0.00	0.00	5.87	25.00	2.93	12.38	15.26	22.60
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	3.39	13.94	0.00	0.00	6.23	25.10	3.12	12.55	15.49	22.60
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47	13.94	0.00	0.00	6.60	25.16	3.32	12.68	15.72	22.60

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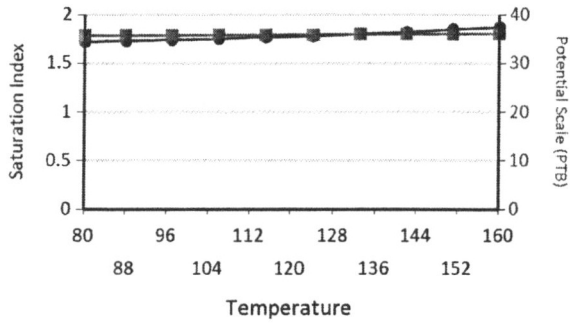
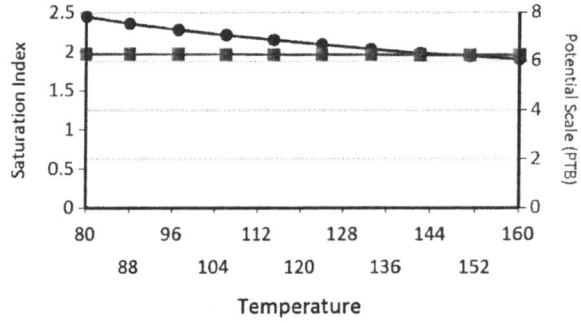
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

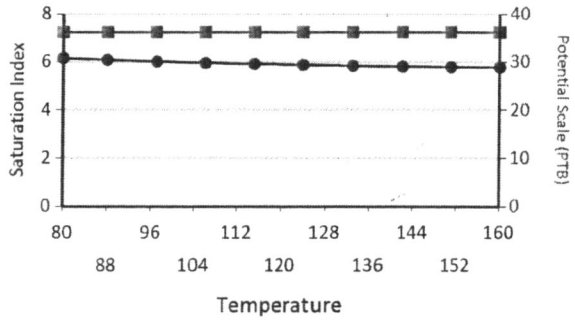
Calcium Carbonate



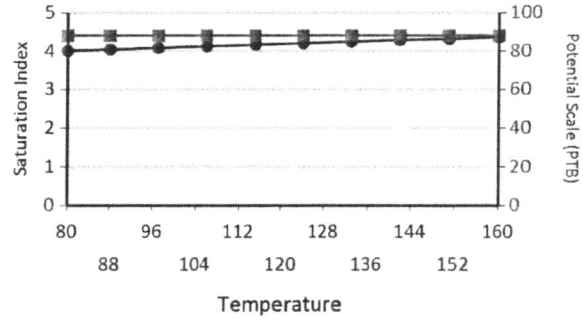
Barium Sulfate



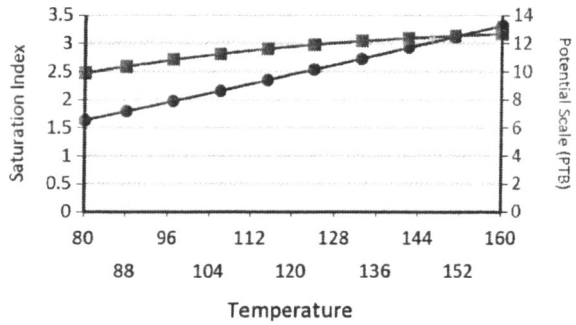
Iron Sulfide



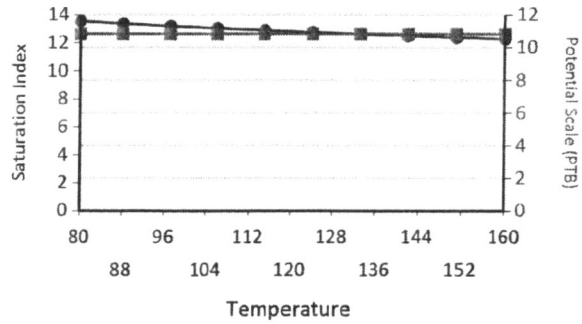
Iron Carbonate



Ca Mg Silicate



Zinc Sulfide



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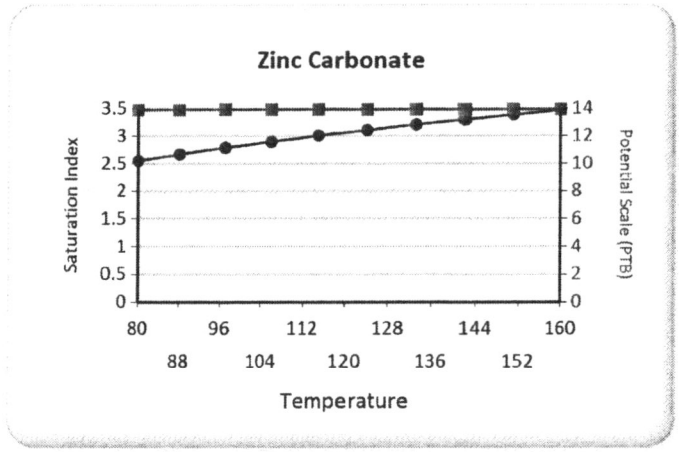
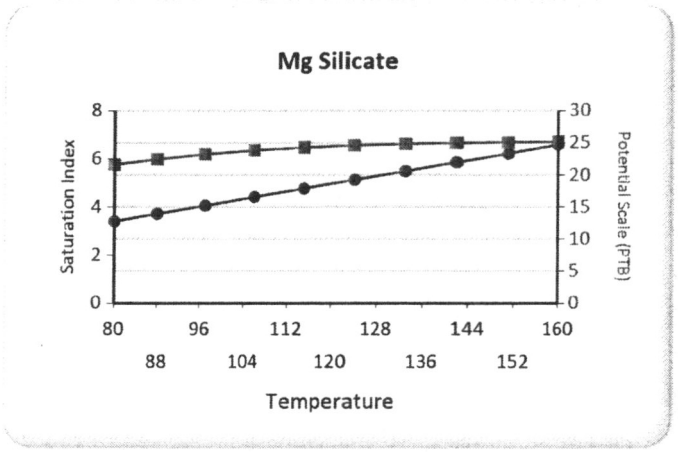
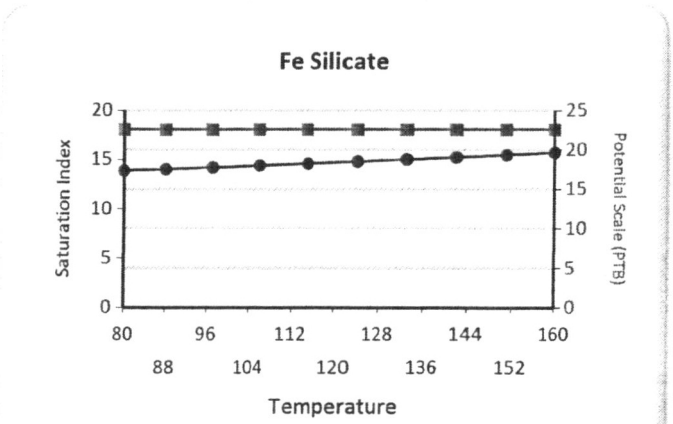
Water Analysis Report







September 28, 2015

Gary Wang
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: EPA AREA PERMIT NO. UT2736-06480
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 21-13

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on September 22, 2015. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

If you need any more information please call at (435) 722-5302.

Sincerely,
Petroglyph Operating Co., Inc.

Rodrigo Jurado
Regulatory Compliance Specialist

Encl: MIT for the Ute Tribal 21-13

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 9/22/15

Test conducted by: C. HANS STEVENSON

Others present: _____

Well Name: 21-13 Type: ER SWD **Status:** AC TA UC

Field: ANTELOPE CREEK

Location: 21-13 Sec: ___ T ___ N / S R ___ E / W County: DUCHESNE State: UT

Operator: PETROGLYPH ENERGY

Last MIT: / / **Maximum Allowable Pressure:** _____ **PSIG**

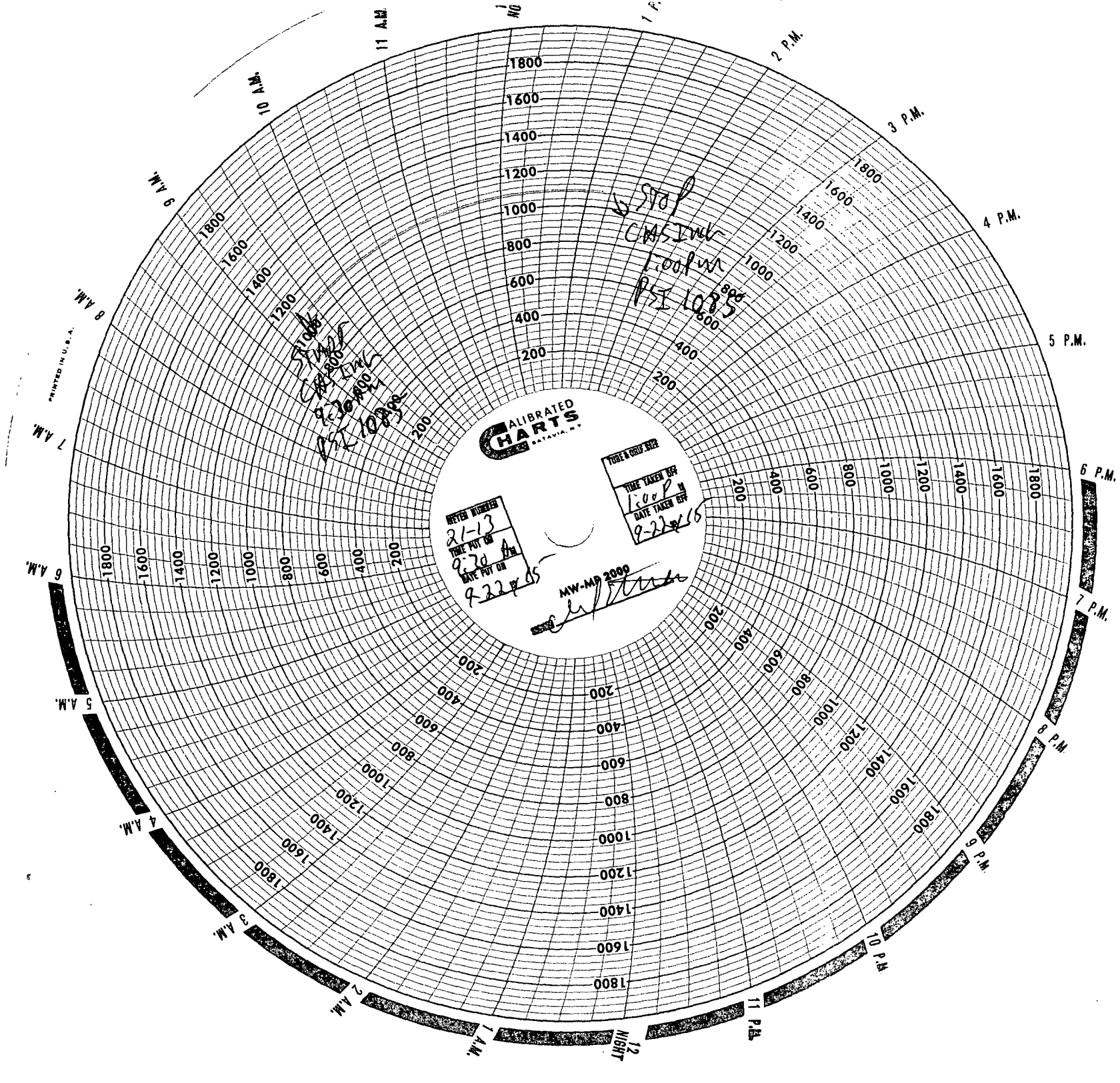
Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 9 **bpd**

Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	1839 psig	psig	psig
End of test pressure	1839 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	1085 psig	psig	psig
5 minutes	1085 psig	psig	psig
10 minutes	1085 psig	psig	psig
15 minutes	1085 psig	psig	psig
20 minutes	1085 psig	psig	psig
25 minutes	1085 psig	psig	psig
30 minutes	1085 psig	psig	psig
Hour 1/2 ~~minutes~~	1085 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ psig.


CALIBRATED CHARTS BATAVIA, N.Y.
METER NUMBER
21-13
TIME PUT ON
9:30 AM
DATE PUT ON
9-22-15
TUBE & ORIF. SIZE
TUBE TAKEN OFF
1:00 PM
DATE TAKEN OFF
9-22-15
MW-MP 2000
PRINTED IN U.S.A.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.

OMB No. 2040-0042 Approval Expires 12/31/2011

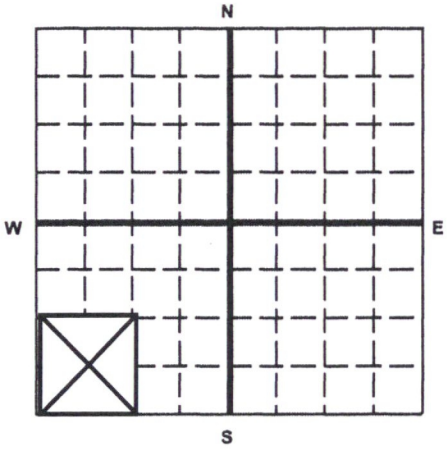
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-06480

Surface Location Description
[ ] 1/4 of [ ] 1/4 of [SW] 1/4 of [SW] 1/4 of Section [21] Township [5S] Range [3W]

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [611] ft. frm (N/S) [S] Line of quarter section and [786] ft. from (E/W) [W] Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells [111]

Lease Name [Ute Indian Tribe] Well Number [UTE TRIBAL 21-13]

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1770	1803	296		0	0
February	13	1806	1831	297		0	0
March	13	1792	1845	250		0	0
April	13	1753	1831	124		0	0
May	13	1786	1820	381		0	0
June	13	1777	1773	384		0	0
July	13	1738	1775	244		0	0
August	13	1808	1834	513		0	0
September	13	1795	1833	387		0	0
October	13	1809	1817	426		0	0
November	13	1814	1825	352		0	0
December	13	1742	1833	298		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

TAB | 2 | CBI

U2 Entered
Date 3/21/14
Initial SB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 21-13 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-263026**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.005
pH:	7.90
Calculated TDS (mg/L):	11383.72
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3937.21	Chloride (Cl):	5000.00
Potassium (K):	62.00	Sulfate (SO_4):	178.00
Magnesium (Mg):	27.00	Bicarbonate (HCO_3):	2074.00
Calcium (Ca):	63.00	Carbonate (CO_3):	
Strontium (Sr):	5.00	Acetic Acid (CH_3COO)	
Barium (Ba):	8.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	7.40	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.39	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.05	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.27	Silica (SiO_2):	21.40

Notes:
B=5 Al=.05 Li=1.01

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.11	43.12	1.96	4.71	0.00	0.00	2.01	5.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.10	42.62	1.81	4.69	0.00	0.00	2.05	5.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.14	43.66	1.68	4.67	0.00	0.00	2.14	5.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.18	44.75	1.57	4.63	0.00	0.00	2.23	5.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.23	45.86	1.47	4.60	0.00	0.00	2.32	5.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.28	46.95	1.39	4.56	0.00	0.00	2.40	5.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.34	48.00	1.31	4.53	0.00	0.00	2.48	5.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.40	48.99	1.25	4.49	0.00	0.00	2.56	5.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.46	49.91	1.20	4.45	0.00	0.00	2.64	5.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.53	50.73	1.16	4.42	0.00	0.00	2.72	5.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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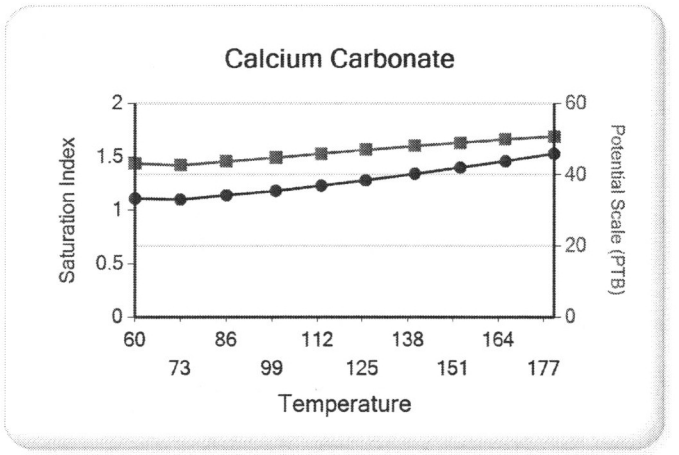
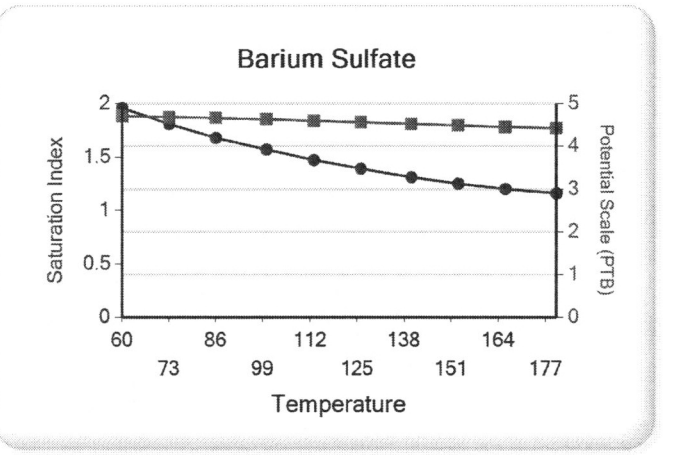
Water Analysis Report

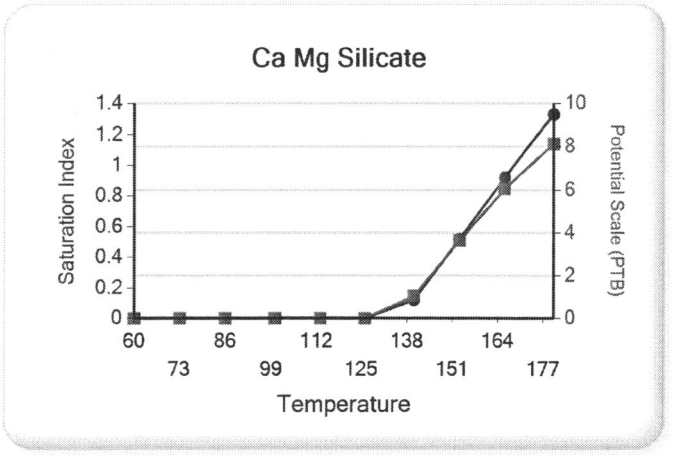
		Hemihydrate CaSO4¯0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09	5.53
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19	5.55
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.07	0.00	0.00	0.00	0.00	0.00	0.00	5.58	5.60
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.14	0.00	0.00	0.00	0.00	0.00	0.00	6.00	5.65
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.18	0.00	0.00	0.00	0.00	0.00	0.00	6.44	5.68
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.21	0.00	0.00	0.55	3.82	0.00	0.00	6.91	5.70
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.23	0.00	0.00	1.24	8.42	0.12	1.03	7.39	5.72
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.24	0.00	0.00	1.93	12.88	0.52	3.64	7.88	5.73
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.25	0.00	0.00	2.62	16.94	0.92	6.04	8.38	5.74
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32	0.25	0.00	0.00	3.31	20.31	1.33	8.12	8.89	5.74

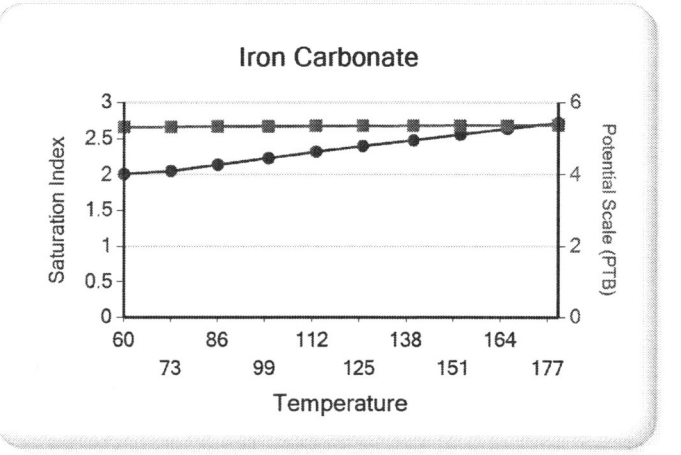
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









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Vernal, UT 84078

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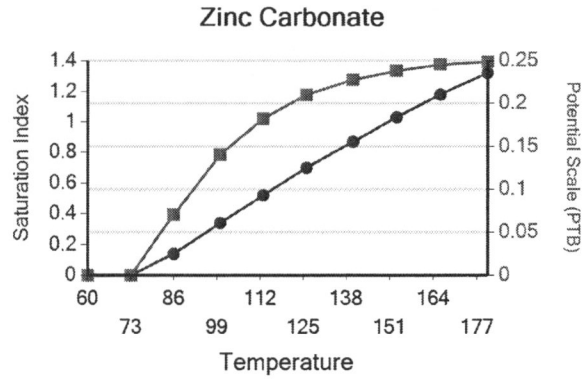
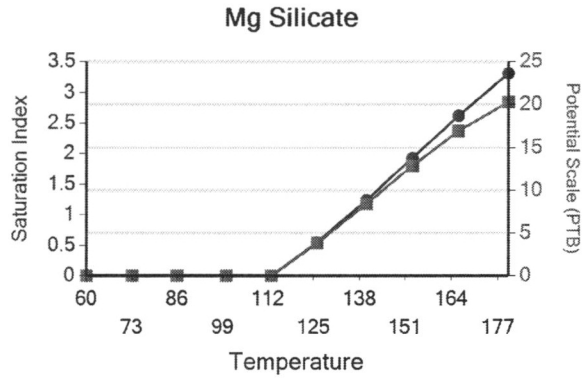
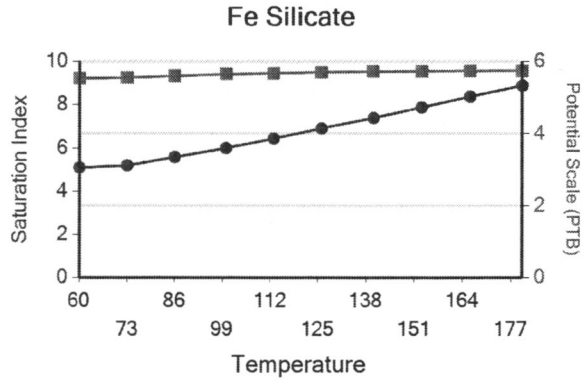
Water Analysis Report







U 4480

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

SEP - 9 2005

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

U2 Entered
Date 10-17-05 op-status = Ac
Initial NW

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: Additional Well to Antelope Creek Area Permit
UIC Permit No. UT20736-00000
Well ID: UT20736-06480
Ute Tribal No. 21-13, Duchesne County, Utah

Dear Mr. Wall:

Thank you for submitting information pertaining to the newly constructed or converted Ute Tribal No. 21-13 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior To Commencing Injection" requirements for the Ute Tribal No. 21-13 injection well required well owner and operator Petroglyph Operating Company, Inc. to submit the following information to the Director:

1. A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
2. Pore pressure calculation of the proposed injection zone, and
3. completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal No. 21-13 enhanced recovery injection well under the conditions of the Authorization for Additional Well and UIC Area Permit UT20736-00000 as modified.

As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future

GREEN | BLUE | CS1
6

notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC
U.S. EPA Region 8, Mail Code 8ENF-UFO
999 18th Street, Suite 300
Denver, Colorado 80202-2466

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal No. 21-13 shall not exceed **1870** psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of Authorization for Additional Well UT20736-06480 and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Dan Jackson of my staff at (303) 312-6155. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, the UIC Technical Enforcement Program may be reached by calling (800) 227-8917.

Sincerely,

Tracy M. Eagle
Director
Ground Water Program

Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer
Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

Elaine Willie
Environmental Coordinator
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

Kirk Fleetwood, PE
BLM - Vernal District
170 South 500 East
Vernal, UT 84078

bcc: Nathan Wiser, 8ENF-UFO